APPENDIX A

COURT OF APPEALS, SIXTH CIRCUIT.

H. K. PORTER COMPANY, INC. v. THE GOODYEAR TIRE & RUBBER COMPANY.

No. 19911

Decided Jan. 27, 1971

Before: Phillips, Chief Judge, Weick and McCree, Circuit Judges.

McCree, Circuit Judge.

The Goodyear Tire and Rubber Company appeals from a judgment declaring valid and infringed certain patents for the manufacture of "Flexible Hose," a product designed as a replacement for factory-installed original equipment automobile radiator hose.

On August 21, 1962, United States Patent No. 3,050,087 was granted to David M. Caplan as inventor of "Flexible Hose," and three years later, on July 13, 1965, Patent No. 3,194,705 was granted to him as inventor of a method and apparatus for manufacturing this flexible mold-formed radiator hose. Five months later, H. K. Porter Company, the current owner of both patents, brought this action against Goodyear, charging infringement of both the '087 and '705 patents. Goodyear denied infringement and attacked the validity of the patents. After an extensive trial, the District Court held the patents valid and infringed, and granted declaratory and other injunctive relief. We affirm.

Replacement radiator hoses play an important role in the automobile repair field. Original equipment hoses often

fail because of internal pressure, vacuum collapse, the corrosive effect of radiator additives on rubber tubing and other causes. These hoses are designed to the specifications of a particular make and model of automobile. Replacement hoses, on the other hand, to be commercially successful, must be capable of substantial standardization. They must not only be able to resist bursting under pressure and to avoid vacuum collapse, but they must also resist bending collapse when they are contorted to permit their being fitted into the varying distances between the engine blocks and radiators of different manufacturers' cars. These technical challenges stimulated intensive inventive activity, some of which gave rise to this litigation.

Considerations of flexbility mandated the use of a material possessing this characteristic of rubber and having sufficient strength to resist bursting under pressure and resistance to the corrosive effect of radiator additives. Also, rigidity is necessary to avoid vacuum collapse, and this requirement presented a difficult problem. In original equipment radiator hoses, an internal spring is commonly used to impart this property. However, original equipment hoses are of uniform length and need not possess the flexibility for adjustment of length as must replacement hoses. Accordingly, the internal spring device was found unacceptable and an external helical reinforcing wire coil spring was considered to give the desired rigidity without preventing flexibility. The precise problem concerned finding a commercially feasible method of incorporating this coil spring appropriately into the rubberoid body of the hose.

Caplan testified that he accomplished this in the following manner;

> A. What we have here is a radiator hose formed of its component parts—I should say simultaneously

formed and cured of its component parts, and has a section that is interiorly and exteriorly convoluted, that has a reinforcement embedded in the apex of those convolutions, and the only covering over that reinforcement is part of the same material which was used to form the body of the tube.

Q. Is that what you consider to be your invention?

A. Well, I'm not great shakes on these statements, but all I know is that I took something that wasn't there and made it and it was a success in the field and made a great difference in the industry. I think it was invention.

Goodyear, which produced a similar product, challenges the validity of the patents in suit on three grounds: prior invention and disclosure; anticipation by the prior art; and obviousness. It also asserts as a defense against the infringement claim the doctrine of file wrapper estoppel. We consider each of these grounds separately, and conclude that the patents are valid and that they have been infringed.

Prior invention and disclosure. Goodyear claims that one Robert E. Roberts invented the same process before Caplan, and that he disclosed this invention to Caplan and to plaintiff's predecessor in interest, the Voit Rubber Company, in 1950 and 1951. Here, the issue of disclosure presents a question of fact, because evidence was introduced in support of the contentions of both parties. The District Court resolved the factual conflict against Goodyear, and its findings are not clearly erroneous. Rule 52(a), Fed. R. Civ. P.

Goodyear's claim of prior invention rests primarily on Roberts' victory over Caplan in Patent Interference No. 91,640. This proceeding concerned an alleged conflict be-

tween Roberts' Patent No. 2,936,812 and claims 1 through 4 of Caplan's '705 patent. The Roberts patent prevailed, and the Caplan '705 application was therefore modified and, as modified, was the basis of the patent issued by the Patent Office. That agency specifically took notice of the interference proceeding, and held that Caplan's patent was valid nevertheless. The decisions of the Patent Office, of course, enjoy a strong presumption of validity under 35 U. S. C. § 282. *Simplicity Mfg. Co.* v. *Quick Mfg., Inc.*, 355 F. 2d 1012, 1014 (6th Cir. 1966). Here the District Court found that all of the elements of the challenged claims of the '705 patent were not found in the Roberts '812 patent, or in any other single one of the five prior patents relied on by Goodyear, and this finding is supported by evidence in the record. Any conflict between the language of claim 16 of the '812 patent and the '705 patent assumes significance only if the invention disclosed by the language, drawings, and specifications of the '812 patent conflicts with the invention claimed and disclosed in the '705 patent. *See e.g., FMC Corp.* v. *F. E. Myers & Bro. Co.*, 384 F. 2d 4, 13, (6th Cir. 1967). Here the District Court found, and we agree, that there was no such conflict.

Anticipation by prior art. Goodyear's claim of anticipation by prior art also rests primarily on Interference No. 91,640. It argues that claims involved in an interference are prior art against the loser of the interference. *In re Risse*, 378 F. 2d 948, 956 (CCPA 1967). But that proposition misses the point raised by plaintiff; that its invention, as ultimately patented, is inventively different from the Roberts '812 patent.

The facts, as found by the District Court, support plaintiff's contention. It found that the Roberts hose is preformed and hand-corrugated on a mandrel and then placed in a mold for curing and vulcanization. This process may

be referred to as mold-curing. The Caplan hose, on the other hand, is mold-formed by putting the separate components in a mold, in which they are molded and vulcanized in the same operation. These findings are supported by evidence in the record and are not clearly erroneous.

Appellant contends that the clearly erroneous standard for reviewing findings of fact, mandated by Rule 52(a), Fed. R. Civ. P., is inapplicable with reference to findings based solely on documentary evidence. The law in this Circuit is well settled to the contrary. *United States Steel Corp.* v. *Fuhrman,* 407 F. 2d 1143, 1145-46 (6th Cir. 1969); *Commissioner* v. *Spermacet Whaling & Shipping S/A,* 281 F. 2d 646 (6th Cir. 1960).

Obviousness. Under 35 U. S. C. § 103, a patent cannot be held valid if the subject matter, although different from the prior art, is such that it would have been obvious to a person of ordinary skill. Goodyear, again relying on the Roberts '812 patent, contends that Caplan's invention is obvious under the test established in *Graham* v. *John Deere Co.,* 383 U. S. 1 (1966). In that case the Supreme Court described the inquiries required by § 103:

> Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.

383 U. S. at 17-18.

In the case at bar, the factual findings required by § 103 were made by the District Court. Then the Court concluded:

> 58. The Court finds that the Caplan inventions, as exemplified in the '087 and '705 patents, would not have been obvious to a man skilled in the radiator hose art in 1953 to 1954. The combination of these isolated features of the prior art and original additions thereto, which produced the '087 and '705 patents, would not have been obvious to one skilled in the radiator hose art. In this connection, it is relevant that the Caplan inventions enjoyed immediate and substantial commercial success. They increased the production rate of flexible radiator hoses significantly. Upon introduction into the market, they immediately began to replace the prior hand-built corded fabric hoses. Indeed, the defendant itself was a substantial customer of the Caplan hoses. Prior to the Caplan inventions, the defendant and many others made long and unsuccessful efforts to develop hoses of their own. The existing flexible rubber hoses were unsatisfactory, were expensive, and difficult to produce. There was a long-felt need for an improved and economical flexible radiator hose, and many individuals have attempted to produce one over an extensive period of time. The evidence of a long-felt need and substantial efforts by many individuals to produce an improved flexible radiator hose gives weight to the Court's inference and conclusion that the Caplan inventions would not have been obvious to a person skilled in the flexible radiator hose art in 1953 and 1954. Rather, the Court has concluded that the Caplan inventions were novel, creative, and inventive and were, indeed, surprising to those skilled in the art at the time they were developed.

This conclusion is supported by the facts found and is correct under applicable law.

File wrapper estoppel. Goodyear argues that the doctrine of file wrapper estoppel prevents H. K. Porter from objecting to Goodyear's product, because it incorporates features which were abandoned by Caplan in the process of and for the purpose of obtaining a patent from the Patent Office. *See Kaiser Industries Corp.* v. *McLouth Steel Corp.*, 400 F. 2d 36 (6th Cir. 1968). Specifically, Goodyear claims that the Caplan patents are limited to "all-rubber" or "single layer" hoses. This contention is without merit. As the District Court found, neither Caplan patent is so limited, and the knit fabric reinforcement employed by Goodyear on its hose is not inventively distinguishable from that patented by Caplan. The District Court also rejected Goodyear's contentions that its wire-reinforcement differed from that in plaintiff's hose and that its hose does not radially expand during the mold-forming process as plaintiff's hose does.

Goodyear does not strenuously argue that there was no infringement if the patent is held valid. We agree with the District Court's findings of fact and conclusions of law, and we affirm that court's decision that the patents in question are valid and have been infringed. The judgment of the District Court is affirmed, and the cause remanded to the District Court for such further proceedings as may be necessary.

Affirmed and remanded.

IN THE UNITED STATES COURT

Northern District of Ohio

Eastern Division

* * (Caption—No. C 65-752) * *

Lambros, District Judge

I. Findings of Fact

*1. This is an action for infringement of United States Patent No. 3,050,087. This patent granted August 21, 1962, to one David M. Caplan, as inventor, related to a flexible rubber hose. The application for this patent was filed March 22, 1957, as a continuation of an earlier application filed February 1, 1954. The complaint also charges infringement of United States Letters Patent No. 3,194,705, granted July 13, 1965, also to David M. Caplan and relating to the "Method and Apparatus for Making Reinforced Corrugated Hose." The application for this patent was filed March 8, 1957, as a division of an earlier application filed February 1, 1954.

2. Plaintiff, H. K. Porter Company, Inc. (Porter) is the owner, by assignments, of the '087 and '705 patents. Defendant Goodyear Tire & Rubber Company (Goodyear), is an Ohio corporation, having a regular and established place of business located in Akron, Ohio, within the Eastern Division of the Northern District of Ohio.

3. This Court has jurisdiction as to the parties to, and the subject matter of, this action under the patent laws of the United States, Title 35, U. S. C. A., §§ 271, 282, 283, 284, 285, and Title 28, U. S. C. A., §§ 1338(a) and 1400(b).

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*The District Court's Findings and Conclusions were not numbered. Numbers have been inserted by defendant-appellant for ease of reference in the briefs.

4. The '087 patent claims a flexible mold-formed hose used as replacement hose on the radiators of automotive vehicles. The flexible molded radiator hose disclosed in this patent has two generally cylindrical ends. The hose itself is corrugated. The body of the hose is composed primarily of rubber or like material, and a helical reinforcing wire coil spring is embedded in the rubber body. This spring has its turns positioned in and secured to the crests of the helical corrugations of the rubber body. The wire coil has a portion of its outer surface disposed contiguous to the outer surface of the crests of the rubber body and completely surrounded by a portion of the rubber body. The ends of the coil spring extend to the ends of the hose, which are covered by fabric sleeves.

5. The construction of this hose, as disclosed in the '087 patent, is such that the hose may be readily bent to conform to the available space adjacent the radiator of an automobile. Also by reason of its construction, the hose is resistant to bursting pressures and to both bending collapse and vacuum collapse.

6. Of the nine claims of the '087 patent, plaintiff relied at the trial only on claims 1 and 2. They are as follows:

Claim 1.

"1. A mold-formed flexible hose comprising an interiorly and exteriorly corrugated tubular body molded from thermosetting plastic material, the exterior corrugations being defined by ridges and intervening valleys, the crests of said ridges, in cross-section axially of said hose, having a continuous, smooth, arcuate, mold-formed outer surface free of protuberances and added material, and wire-like reinforcing means encircling said body and secured to said ridges at the

crests thereof, said reinforcing means having a portion of its outer surface substantially immediately contiguous the outer surface of said crests and being completely surrounded by thermoset plastic material, the thickness of said material radially outwardly of said reinforcing means being less than the thickness thereof radially inwardly of said reinforcing means."

Claim 2.

"2. A flexible hose as set forth in Claim 1 in which said ridges are helical and said reinforcing means is a helical coil of wire."

7. The '705 patent relates to a method for forming a finished, unitary, flexible molded corrugated wire-reinforced rubber hose, such as is diclosed in the '087 patent in a single mold-forming operation.

8. A typical procedure which may be followed in forming the flexible molded corrugated wire-reinforced rubber hose by the method disclosed in the '705 patent is set forth in the illustrative chart (PX 32), prepared by plaintiff's expert, Dean Fischer (TR 443-444).

9. Of the seventeen claims of the '705 patent, plaintiff relied at the trial upon method claims 1, 2, 3, 5, 6, 13, 14, 15, and 16. Plaintiff relied more specifically upon claims 1, 3 and 14 as representative of this group of claims:

Claim 1.

"1. A method of fabricating a hose of thermosetting plastic material with circumferential turns of wire reinforcement means embedded therein, characterized by the use of a hollow mold with a helically corrugated

interior circumferential wall and including the steps of: placing a tube of thermosetting plastic material in said mold with said wire reinforcement means surrounding the tube in the mold and free of engagement with said tube at portions corresponding to the helically corrugated interior wall of said mold; sealing off the interior of the tube from the interior of the mold; introducing fluid under pressure into said tube for the purposes of providing pressure to expand the tube radially; supplying heat to said tube to cause material of the expanded tube to flow around the turns of said reinforcement means into contact with the surrounding mold walls to assume the configuration of the mold; and supplying heat to cure the plastic material of the expanded tube."

Claim 3.

"3. A method of fabricating a helically corrugated hose of thermosetting plastic material with circumferential turns of wire reinforcement means embedded therein, said method being characterized by the use of a hollow mold with a helically corrugated interior circumferential wall and including the steps of: placing a tube of thermosetting plastic material inside the turns of said wire reinforcement means; placing the assembly of tube and wire reinforcement means in said mold with the internal surface of said turns of wire in radially spaced relation to the external surface of said tube and with the turns of said wire reinforcement means freely disposed within the helical corrugations of said mold; and with the interior of the tube sealed off from the interior of the mold, introducing fluid under pressure into said tube and also applying heat to said tube for the purposes of, first, expanding the tube radially outward thereby causing the plastic

material to engage and flow around the turns of the reinforcement means to embed the reinforcement means, second, forming the assembly to the configuration of the interior of the mold, and third, at least partially curing the plastic material in the expanded configuration."

Claim 14.

"14. A method for the manufacture of reinforced helically corrugated hose which comprises placing in a hollow internally corrugated mold the components of said hose before said components are formed into a hose, said components comprising a tubular member of elastomeric material, and a reinforcing member having axially spaced turns whose interior diameter is greater than the exterior diameter of said tubular member, said reinforcing member being disposed in said mold surrounding said tubular member with the axially spaced turns of said reinforcing member in alignment with and freely positioned within the valleys of the corrugations of said mold in radially spaced relation to said tubular member, and uniting and forming said components into a hose, by subjecting said tubular member to internal pressure accompanied by heating to cause it to expand and soften and conform to the shape of said mold while simultaneously flowing around and embedding said turns therein and to at least partially set the material of said tubular member."

11. David M. Caplan is the patentee of the '087 and '705 patents. In January, 1951, he entered the employ of the W. J. Voit Company in California. Voit was at that time manufacturing and selling a so-called corded flexible radiator hose. This was a thin-walled, fabric-covered hose made largely by hand operations.

12. In the manufacture of the corded flexible radiator hose, a tube of rubber is placed on an inflatable mandrel and a closed coil wire spring is positioned over the rubber tube. The wire spring is manually spaced along the rubber tube. The building mandrel is then inflated, expanding the rubber tube and holding it tightly against the wire spring. The entire hose assembly is then cemented and an end strip is placed at each end of the hose assembly to form the built-up ends of the finished hose. A fabric cover is then hand-wound over the entire length of the rubber tube and wire spring to form the outer cover of the hose. With the fabric cover in place, the components of the hose are then solidified by a stitching operation in which an elastic band is hand-wrapped around the entire hose assembly to eliminate any entrapped air and to form the components into a compact hose assembly. The building mandrel is then deflated and the stitching band removed.

13. The hose assembly is then transferred to a "cording" mandrel. The hose assembly is positioned on the cording mandrel and encased in a so-called "wet wrap" by manually wrapping a wet strip of nylon or cotton fabric. After the "wet wrap" is in place, a length of regular sash cord is tightly hand-wound around the hose assembly between the spring coils. It is necessary to apply substantial pressure in the cording operation, since the "cording," in effect, formed the hose convolutions by depressing the body of the hose assembly between the coils of the wire spring. The cording operation also resulted in some decrease in the length of the hose.

14. With the cord tightly in place, the entire hose assembly, while still on the cording mandrel, is placed in a steam vulcanizer and subjected to a steam atmosphere for

a period of from 30 to 55 minutes, with an average time of about 45 minutes being required in the vulcanizer. Upon completion of the vulcanizing operation the sash cord is manually removed from the outside of the cured hose. Thereafter, the wet-wrap is manually removed and the cured hose is stripped from the cording mandrel.

15. This type of hose (and the process by which it was manufactured) presented a number of problems. The amount of convoluting and its attendant decreasing in the length of the hose in the cording operation varied from operator to operator and from day to day so that the completed hoses were not uniform in length or appearance. In addition, the corded radiator hose readily lost adhesion between the outer fabric cover and the inner tube. This resulted in failure of the hose in use, since the loss of adhesion between the outer fabric cover and the inner tube stock would cause the wire coil spring to cut through the tube. Furthermore, the manufacture of the corded hose was essentially a manual operation. It was slow, laborious and uneconomical. There was a demand for a better hose for the automotive radiator hose replacement trade and for a more efficient and more economical method of making such a flexible replacement hose.

16. Because of the problems experienced by his employer, Voit, with its hand-built corded flexible radiator hoses, and the demand which existed in the trade for a better flexible radiator replacement hose, Caplan undertook in the period 1952-1953 to improve upon the prior art, and to develop a new and better hose than the hand-built corded hose. In the course of this development work, Caplan conceived the idea of an entirely mold-formed hose in which the components of the hose, including a rubber

tube and an open-coil wire reinforcing spring, are separately assembled and placed in a convoluted mold and are formed in the convoluted mold into a completed, unitary flexible hose in a single mold-forming operation.

17. Following this development work, Caplan interested his employer, Voit, in the manufacture of his flexible mold-formed radiator hose. Voit set up facilities for the commercial production of Caplan's mold-formed radiator hose. Initially a pilot plant operation was set up in Los Angeles, California. Specimens of the Caplan flexible molded radiator hose, made by this pilot plant, were subjected to field testing in which they performed very satisfactory.

18. Sometime late in 1954 Voit set up commercial operations for making the Caplan hose in Danville, Illinois; and early in 1955, Voit started to sell the Caplan hose. The Caplan hose quickly began to replace the hand-built corded flexible radiator hose.

19. Sometime in late 1956 Voit sold its business of manufacturing the Caplan hose, including its plant at Danville, Illinois, and the molds and other equipment therein, to the Thermoid Company. Subsequently, the plaintiff acquired Thermoid, including the Danville plant, and continued thereafter to manufacture and sell the Caplan mold-formed flexible radiator hose. While remaining an employee of Voit, Caplan continued his connection with the Danville plant under Thermoid ownership until sometime in 1958 during which time he provided technical assistance to Thermoid employees in the manufacture of the Caplan hose.

20. After Thermoid acquired the Danville plant of Voit, it discontinued the manufacture of the hand-built corded

flexible radiator hose which it had previously manufactured and sold, and converted its entire commercial production of automotive radiator hoses at its Danville plant to the Caplan hose. Since 1957 the corded fabric radiator hose has no longer been commercially made or sold by the plaintiff or by the defendant.

21. The Caplan mold-formed flexible radiator hose manufactured by the Voit Company at its Danville plant, the hose as manufactured by Thermoid (and later by the plaintiff) at its Danville plant in the period 1957-1960, and the hose manufactured and sold by plaintiff since 1960 all embody the construction defined in claims 1 and 2 of the '037 patent and were made by the method of the '705 patent (as defined in claims 1, 3 and 14 thereof).

22. During the period from approximately 1952 to 1956, inclusive, Thermoid sold to the defendant hand-built, corded flexible radiator hose. After Thermoid acquired the Danville plant from Voit, Thermoid manufactured and sold to the defendant its mold-formed radiator hose. After the plaintiff acquired the Danville plant from Thermoid, plaintiff continued to manufacture and sell mold-formed radiator hose to the defendant until some time in the year 1965.

23. During the years 1957 to 1965, inclusive, the plaintiff and its predecessor, Thermoid, manufactured and sold flexible mold-formed radiator hose in substantial quantities to the defendant and others.

24. In the first quarter of 1960 the plaintiff began the manufacture and sale of a flexible mold-formed radiator hose embodying a longitudinally-extending cord reinforcement. Since then, plaintiff has continued to manufacture

and sell such cord-reinforced flexible mold-formed radiator hose. The addition of the longitudinal cord-reinforcement to the all-rubber mold-formed flexible radiator hose previously manufactured and sold by the plaintiff, as exemplified by PX 22, did not change in any way the method employed by the plaintiff at its Danville, Illinois plant in mold-forming its flexible radiator hoses. The methods employed by the plaintiff in making both types of hoses were substantially the same, except for the preliminary step of incorporating cord-reinforcement in the "green hose."

25. The substantial sales of the all-rubber flexible mold-formed radiator hose and of the cord-reinforced flexible mold-formed radiator hose establish that both of these hoses were commercially successful and were acceptable and usable automotive radiator replacement hoses.

26. The plaintiff gave actual notice in writing to the defendant as to the '087 patent on or about May 27, 1965, and the plaintiff notified the defendant as to the issuance of the '705 patent on or about August 26, 1965. Plaintiff gave further notice to the defendant as to the '705 patent by the filing of the complaint herein in November, 1965.

27. The plaintiff began marking its flexible molded radiator hose with the number of patent No. 3,050,087 sometime in the fall of 1962. This was done by incorporating the number of patent No. 3,050,087 in the molds employed in making plaintiff's hose.

28. Sometime in September, 1965, the plaintiff began marking its flexible molded radiator hose with the number of patent No. 3,194,705; and the plaintiff continued there-

after at all times material hereto to mark its flexible molded radiator hose with the number of patent No. 3,194,705.

29. The defendant's hose is formed from a so-called "green hose." This consists of an all-thermoplastic inner tube over which a loose fabric knit is applied. These two components are covered with a thermoplastic tubular layer to form the complete so-called "green hose."

30. The only difference between the construction of the defendant's flexible mold-formed radiator hose and the flexible mold-formed radiator hose disclosed in the '087 patent relates to the incorporation in defendant's flexible mold-formed radiator hose of the knit fabric reinforcement. This knit reinforcement increases the strength of the defendant's hose and its resistance to bursting pressures when used in the radiator system of an automotive vehicle. It does not in any substantial or significant way change the function, mode of operation or manner of use of the defendant's flexible mold-formed radiator hose as compared to the flexible mold-formed hose disclosed in the '087 patent, and as defined in claims 1 and 2 of the '087 patent.

31. Defendant contends that its flexible radiator hose does not come within the scope of claims 1 and 2 of the '087 patent because the wire reinforcement of defendant's hose is "embedded" in the hose convolutions, whereas the language of claim 1 of the '087 patent calls for the wire to be "secured to" the ridges of the hose at the crests. However, an inspection of defendant's hoses reveals that the spring coils in defendant's hose are located in the crests of the hose, with portions of the spring coils contiguous to the outer surface of the crests and completely surrounded by the thermoset plastic material of the "green hose."

They are, therefore, "secured to" the ridges of the hose in the crests thereof, in the same sense and to the same extent as is recited in claim 1 of the '087 patent.

32. Defendant also contends that, in its method of making its mold-formed flexible radiator hose, the wire coil reinforcing spring does not have the degree of radial spacing or freedom from engagement with the "green hose" as is disclosed between the spring and the green tube in the illustrative drawings of the '705 patent. However, the evidence, including the testimony of plaintiff's expert, Dean Fischer, shows that in defendant's method of making its flexible mold-formed radiator hose there is sufficient radial spacing or freedom of engagement between the wire coil reinforcing spring and the "green hose" to enable the coils of the wire-reinforcing spring to be adjusted longitudinally along the "green hose" so that the spring coils can be properly positioned in the valleys of the mold corrugations.

33. Claims 1, 3 and 14 of the '705 patent do not recite the *degree* of radial spacing or freedom of engagement between the green hose or rubber tube and the wire-reinforcing spring. The only requirement of the '705 patent (as construed in the light of the specification and drawings thereof) is that there be sufficient freedom between the "green hose" and the coils of the wire coil reinforcing spring to enable the wire coil reinforcing spring to be readily adjusted along the "green hose" so as to properly distribute the spring coils in the valleys of the mold corrugations, thus insuring that there is only one coil seated in each mold convolution. This is necessary to avoid wires crossing the mold convolutions, thereby producing a defective hose.

34. Defendant also contends that there is no radial expansion of its "green hose" during the process of forming its hose. However, a visual comparison of defendant's "green hose," as it appears before the mold-forming operation, with the defendant's finished hose, as it appears after the mold-forming operation, reveals that radial expansion has, in fact, occurred in the process of making defendant's hose, and particularly in those portions of the "green hose" which correspond to the crests of the finished hose.

35. In this connection, the Court notes that the manufacturing tolerances for the defendant's "green hose," as contained in its specifications for an acceptable "green hose," provide for a "green hose" having an external diameter which can be *smaller* than the minimum internal diameter of defendant's mold. Also, the external diameter of defendant's "green hose," according to its specifications, is *always* smaller than the maximum internal diameter of defendant's mold.

36. Defendant also contends that the inclusion of the knit reinforcement in its "green hose" distinguishes its process for forming flexible radiator hoses from the process defined by claims 1, 3 and 14 of the '705 patent. This contention by defendant is without merit, since the only requirement of the disclosure and claims of the Caplan '705 patent is that the "green hose" be formed principally or chiefly of rubber or similar thermoplastic material, so that, during the mold-forming process, at least a portion of the thermoplastic material of the "green hose" will soften and flow sufficiently to cover the reinforcing spring and conform to the shape of the convoluted mold. This teaching of the Caplan patent is followed in defendant's process.

37. The Court has concluded that the defendant's flexible hose was developed with full knowledge of the plaintiff's flexible hose and of the patents underlying it. Furthermore, the Court has concluded that the defendant attempted to duplicate the plaintiff's flexible hose both in method, structure, and performance without infringing upon the plaintiff's patents. The record is replete with evidence supporting these findings. Indeed, the evidence indicates that the defendant's development process became progressively more similar to the plaintiff's patented method and structure. Statements and correspondence of the defendant's own agents indicate, that the defendant's accused article and method is patterned after the plaintiff's patented article and method.

38. The defendant, at the trial, attempted to demonstrate that Mr. Caplan was not the original inventor of the matter disclosed in the '087 and '705 patents. Defendant asserted that one Robert E. Roberts developed this knowledge sometime in 1950 or 1951, and that he disclosed it to Caplan and a number of other Voit employees. It is the Court's conclusion that the evidence does not support this position. The Court finds that Caplan had no knowledge of any of Roberts' developments at the time he discovered the information underlying the '087 and '705 patents. Rather, the Court finds that Caplan made these developments and discoveries on his own and without the benefit of any knowledge referrable to Robert E. Roberts. Caplan's work was entirely independent of Roberts and did not rely upon Roberts in any significant way.

39. At the trial the defendant relied upon the following patents in support of its defenses (under Title 35, U. S. C. A., §§ 102 and 103) to claims 1 and 2 of the '087 patent:

Patent No.	Patentee	Title	Date
314,400	Eames	Hose or Tubing	March 24, 1885
375,877	Judson	Rubber Hose	January 3, 1888
2,248,898	Ross	Metliod of Making Rubber Articles	July 8, 1941
2,272,704	Harding	Method and Apparatus for Making Corrugated Tubes	February 10, 1942
2,396,059	F. T. Roberts	Flexible Tube	March 5, 1946
2,570,259	McKinley	Method of and Apparatus for the Manufacture of Flexible Conduits	October 9, 1951
2,936,812	R. E. Roberts	Method and Apparatus for Making Flexible Corrugated Reinforced Hose	May 17, 1960
227,373 (British)	Kort	Improvements Relating to the Manufacture of Hose Pipes of Rubber or the Like	January 15, 1925 (Complete Accepted) (Printed, 1925)

40. At the trial the defendant relied upon the following patents in support of its defenses (under Title 35, U. S. C. A., §§ 102 and 103) to the claims of the '705 patent:

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2,248,898	Ross	Method of Making Rubber Articles	July 8, 1941
2,272,704	Harding	Method and Apparatus for Making Corrugated Tubes	February 10, 1942
2,300,441	Voit	Method of Making Athletic Balls	November 3, 1942
2,936,812	R. E. Roberts	Method and Apparatus for Making Flexible Corrugated Reinforced Hose	May 17, 1960
227,373 (British)	Kort	Improvements Relating to the Manufacture of Hose Pipes of Rubber or the Like	January 15, 1925 (Complete Accepted) (Printed, 1925)

41. The Eames patent (No. 314,440, issued Mareh 24, 1885) discloses a railroad vacuum brake hose. As shown in the patent drawings, all of the material of the Eames hose is outside of the reinforcement wire and the wire is not located within the body of the hose material. This arrangement of hose components is unsuitable for a hose under positive fluid pressure since such pressure would cause the hose wall material to separate from the wire. Furthermore, Eames taught the art to *avoid* the use of hose in which the wire is "entirely embedded" in the hose material. Eames, we note, recognized the equivalence between all-rubber and composite (fabric and rubber) hose materials in the rubber hose art.

42. The Judson patent (No. 375,877, issued January 3, 1888) discloses a railway *pressure* brake hose. The Judson hose is externally, but not internally, corrugated. This makes the Judson hose relatively stiff and inflexible and thus unsuitable as an automotive radiator replacement hose. An essential teaching of Judson is that layers of canvas or other equivalent heavy fabric should be placed both outside and inside the reinforcement wire. Judson's wire is "entirely embedded" in the material of the hose wall.

43. The Ross patent (No. 2,248,898, issued July 8, 1941) discloses and claims a process of making gas mask tubes from inelastic gels which are capable of plastic flow in the wet gel state under stress. No wire reinforcement for the tubes is disclosed or suggested in Ross. Only low pressure air, but not steam or hot air, is used during the expansion step in the mold of Ross. After the expansion step in the mold, Ross removes water from the gel by synaeresis prior to the vulcanization or curing step. The Ross patent was specifically considered by the Patent Office in connection with the application for the Caplan '705 patent.

44. The Harding patent (No. 2,272,704, issued February 10, 1942) disclosed and claimed a method and apparatus for making corrugated rubber tubes. The Harding process involves shaping or forming the corrugated tube on a corrugated mandrel prior to curing the preformed tube in a vulcanizing chamber, instead of using a mold. No wire reinforcement for the corrugated tube is disclosed or suggested anywhere in Harding.

45. The Voit patent (No. 2,300,441, issued November 3, 1942) discloses and claims a multi-step method of making athletic balls, such as basketballs, utilizing a plurality of separate forming and vulcanizing steps. The balls disclosed by Voit have no corrugations, externally or internally, and contain cord, yarn or thread reinforcement rather than any metallic wire reinforcement. The Voit balls are always provided with wear-resistant covers after they are cured in molds.

46. The Roberts patent (No. 2,396,059, issued March 5, 1946) discloses a flexible gas mask tube, the corrugations of which are formed by a cording or hand-wrapping step prior to a separate vulcanizing step. The utility of the hoses of this patent relates to applications requiring tubing which can be readily stretched lengthwise, such as in oxygen helmets and anesthetizing apparatus. The closed coil spring used in making the Roberts tube is engaged to the inner tube by tape and/or cement and is under considerable tension in the end product. An outer fabric cover, or stockinet, is used in making the Roberts gas mask tube. The thickness of the tube material radially outward of the wire reinforcement is substantially the same as the thickness thereof radially inward of the wire. The Roberts '059 patent was specifically considered by the Patent Office in connection with the application for the Caplan '087 patent.

47. The McKinley patent (No. 2,570,259, issued October 9, 1951) discloses and claims a method and apparatus for making flexible vacuum cleaner hose. McKinley's conduit is not mold-formed, but an outer wire helix is used for cording down the hose between its reinforcement wire coils to form the external corrugations in the hose prior to the vulcanizing or curing step. The inner surface of the finished McKinley hose is "completely smooth" and uncorrugated. This McKinley patent was specifically considered by the Patent Office in connection with the application for the Caplan '087 patent (PX 3, page 43).

48. The Roberts Patent No. 2,936,812 was issued on a continuation-in-part application, filed September 3, 1957, of the Roberts parent application, filed May 21, 1954. The Roberts parent application was filed three months later than the Caplan parent application, which was filed February 1, 1954. Claims 16 to 19, inclusive, of Roberts '812 were added for the first time when the Roberts continuation-in-part application was filed in 1957.

49. Roberts patent '812, issued May 17, 1960, discloses and claims a method and apparatus for making flexible corrugated wire-reinforced hose. Roberts discloses only one method of making the several constructions of his hose. In the Roberts method, the hose corrugations are formed on an inflatable, convoluted forming mandrel in a separate "forming" or cording step, prior to "setting," i.e., vulcanizing or curing, the already "formed" hose in a mold. Claims 16 to 19, inclusive, of Roberts '812 define in broad terms the method disclosed by Roberts in his specification of making his hose construction with the wire reinforcement in the crests of the external corrugations of the hose. In the Roberts method, an inner envelope is placed over

the inflatable mandrel and a reinforcing spring placed over the envelope. An outer envelope is positioned over the reinforcing spring to form the hose assembly. The mandrel is inflated into corrugated shape, thereby forming the inner envelope into corrugated shape also. For locating the wires in the troughs of the hose corrugations, the mandrel is inflated after the reinforcing spring has been covered by the outer envelope. For locating the wires in the crests of the corrugations, the mandrel is inflated prior to the outer cover being applied over the spring and inner envelope. Cement is applied between the inner and outer envelopes and the hose assembly is adhered together in corrugated shape by means of a forming strip wrapped down tightly against the troughs of the corrugations. When the hose assembly is adhered in corrugated form, the forming mandrel is deflated and the corrugated hose assembly removed for curing. This patent was specifically considered by the Patent Office in connection with the application for the '705 patent.

50. The Kort British patent (No. 227,373, accepted January 15, 1925) discloses the formation and vulcanization of a rubber hose. The patent does not disclose or suggest the use of any wire reinforcement in the hose or the formation of any corrugations therein.

51. All of the elements of product claims 1 and 2 of the '087 patent are not found in any single one of the four prior art patents applied against the claims. The Judson hose is not "interiorly . . . corrugated" and the outer surface of the hose is not "free of . . . added material" as recited in claim 1 of the '087 patent. In the Eames hose, all of the material is outside of the wire reinforcement and "the thickness of said material radially outwardly of said reinforcing means" is, therefore, *greater* than, not

"less than the thickness thereof radially inwardly of said reinforcing means," as recited in claim 1 of the '087 patent. In the Roberts '059 hose, the thickness of the material radially outward of the reinforcing means is "substantially the same" as the thickness thereof radially inward of said reinforcing means. Also, the Roberts '059 hose is not "mold-formed" but is hand-built and corded-down and the outer surface thereof is not "free of . . . added material," as recited in claim 1 of the '087 patent, since it has an outer fabric cover over the reinforcing spring. The Roberts '812 hose likewise is not "mold-formed" but is hand-formed in corrugated shape by a manually-applied forming strip. In addition, the outer surface of the Roberts '812 hose is not "free of . . . added material," as recited in claim 1 of '087, since it has an outer cover over the wire reinforcement. In the Roberts '812 hose, the thickness of the hose material radially outward from the wire reinforcement is "substantially the same" as the thickness radially inward.

52. All of the elements of method claims 1, 3 and 14 of the '705 patent are not found in any single one of the five prior art patents relied upon by defendant as against the relevant method claims of the '705 patent, namely, the patents to Eames, Judson, Harding, Voit and Roberts '812.

53. All of the elements of the relevant claims of the '087 and '705 patents or their equivalents are not found in any one single patent relied upon by the defendant where they do substantially the same work in substantially the same way to accomplish the same result. Thus, the inventions of the '087 and '705 patents are not anticipated by the prior art relied upon by defendant.

54. The burden of establishing that the claimed subject matter of the '087 and '705 patents as a whole was obvious

to one skilled in the flexible radiator hose art at the time the inventions disclosed and claimed in these patents were made is upon the defendant (35 U. S. C., § 282).

55. The Court has concluded that at the time the inventions disclosed and claimed in the patents in suit were made, these developments would not have been obvious to one skilled in the flexible radiator hose art. The Roberts '059 and '812 patents exemplify the prior art of hand-built fabric hoses. The Roberts '812 patent was merely another attempt to improve the prior art of hand-built hoses. Indeed, much of the work being done in this field at the time of the Caplan inventions is directed towards improvement in the hand-built fabric hose.

56. The Eames and Judson patents were over seventy years old at the time of the Caplan inventions. The age of these patents tends to negate any inference that the Caplan patents were obvious on the basis of these ancient patents.

57. Moreover, the Roberts '812 patent, including claim 16 thereof, was fully considered by the Patent Office in connection with the allowance of the relevant claims of the '705 patent in suit. This adds weight to the presumption of administrative correctness attached to the actions of the Patent Office in issuing the '705 patent and to the validity of the '705 patent itself.

58. The Court finds that the Caplan inventions, as exemplified in the '087 and '705 patents, would not have been obvious to a man skilled in the radiator hose art in 1953 to 1954. The combination of these isolated features of the prior art and original additions thereto, which produced the '087 and '705 patents, would not have been ob-

vious to one skilled in the radiator hose art. In this connection, it is relevant that the Caplan inventions enjoyed immediate and substantial commerical success. They increased the production rate of flexible radiator hoses significantly. Upon introduction into the market, they immediately began to replace the prior hand-built corded fabric hoses. Indeed, the defendant itself was a substantial customer of the Caplan hoses. Prior to the Caplan inventions, the defendant and many others made long and unsuccessful efforts to develop hoses of their own. The existing flexible rubber hoses were unsatisfactory, were expensive, and difficult to produce. There was a long-felt need for an improved and economical flexible radiator hose, and many individuals have attempted to produce one over an extensive period of time. The evidence of a long-felt need and substantial efforts by many individuals to produce an improved flexible radiator hose gives weight to the Court's inference and conclusion that the Caplan inventions would not have been obvious to a person skilled in the flexible radiator hose art in 1953 and 1954. Rather, the Court has concluded that the Caplan inventions were novel, creative, and inventive and were, indeed, surprising to those skilled in the art at the time they were developed.

II. Conclusions of Law

A. Validity

1. Claims 1 and 2 of the '087 patent and claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent carry a statutory presumption of validity arising from their issuance under 35 U. S. C. A., § 282.

2. The burden of establishing invalidity of claims 1 and 2 of the '087 patent and of claims 1, 2, 3, 5, 6, 13, 14, 15 and

16 of the '705 patent rests upon the defendant, and this burden has not been sustained by the evidence. 35 U. S. C. A., § 282; *Mumm* v. *Decker & Sons,* 301 U. S. 168 (1937); *Forestek Plating & Mfg. Co.* v. *Knapp Monarch,* 106 F. 2d 554 (6th Cir. 1939).

3. The presumption of validity attached to the issuance of claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent is further strengthened by the fact that these claims were allowed by the Patent Office after the Patent Office had fully considered the entire disclosure and claims of the Roberts '812 patent including claim 16 thereof, admittedly the most pertinent prior art reference relied upon by the defendant as to the '705 patent. *Williams Mfg. Co.* v. *United Shoe Machinery Corp.,* 121 F. 2d 273 (6th Cir. 1941).

4. Since all of the elements of claims 1 and 2 of the '087 patent and all of the steps of claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent could not be found in any one single patent, these claims are not invalid because of anticipation under 35 U. S. C. A., § 102; *Aluminum Co. of America* v. *Sperry Products, Inc.,* 285 F. 2d 911 (6th Cir. 1960); *Dewey & Almy Chemical Co.* v. *Mimex Co.,* 124 F. 2d 986 (2d Cir. 1942).

5. Claims 1 and 2 of the '087 patent and claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent are not invalid, under 35 U. S. C. A., § 102, based upon the prior art relied upon by the defendant as to said claims of the '087 and '705 patents.

6. Claims 1 and 2 of the '087 patent and claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent are not invalid because of alleged disclosure of the subject matter thereof by Robert E. Roberts or Fred T. Roberts, Sr., to the patentee,

David M. Caplan, or to any other employee of the W. J. Voit Company, or because of alleged prior invention by the said Robert E. Roberts or Fred T. Roberts, Sr., of the subject matter of said claims of the '087 and '705 patents.

7. The defense of prior invention must be established by evidence which is clear and convincing. *Barbed Wire Patent Case,* 143 U. S. 275 (1892); *Eibel Process Co.* v. *Minnesota & Ontario Paper Co.,* 261 U. S. 45 (1923); *Smith* v. *Hall,* 301 U. S. 216 (1937); *Cold Metal Products Co.* v. *E. D. Bliss Co.,* 285 F. 2d 244 (6th Cir. 1960); *National Latex Products Co.* v. *Sun Rubber Co.,* 274 F. 2d 224 (6th Cir. 1960).

8. The defendant's defense of alleged prior invention by Robert E. Roberts or Fred T. Roberts, Sr., as to the subject matter of claims 1 and 2 of the '087 patent, and as to the subject matter of claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent, and the alleged disclosure thereof to the patentee, David M. Caplan, and/or other employees of the W. J. Voit Company, has not been sustained by the evidence.

9. The defendant has failed to sustain any defense under 35 U. S. C. A., § 102, as against the claims of the '087 and '705 patents in suit.

10. Claims 1 and 2 of the '087 patent and claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent are not invalid under 35 U. S. C. A., § 103, because the differences between the subject matter of said claims and the prior art relied upon by the defendant are such that the claimed subject matter as a whole would have been non-obvious at the time the Caplan inventions were made to a person having ordinary skill in the radiator hose art. 35 U. S. C. A., § 103.

11. The inventions of the '087 and '705 patents enjoyed substantial commercial success; they filled a long-felt need for a better flexible radiator hose for the automotive replacement market; they substantially replaced in the trade the prior replacement radiator hose; and they achieved success in solving problems of long-standing in the prior hose, which solutions had eluded the industry, including the defendant. These factors are relevant in establishing that the claimed subject matter of the claims of the '087 and '705 patents was non-obvious. *Graham* v. *John Deere Co.*, 383 U. S. 1 (1966); *Goodyear Tire & Rubber Co., Inc.* v. *Ray-O-Vac Co.*, 321 U. S. 275 (1944); *Reiner* v. *I. Leon Co.*, 285 F. 2d 501 (2d Cir. 1960); *Mantle Lamp Co. of America* v. *George H. Bowman Co.*, 53 F. 2d 441 (6th Cir. 1931); *Simplicity Mfg. Co.* v. *Quick Mfg., Inc.*, 355 F. 2d 1012 (6th Cir. 1966).

12. The subject matter of claims 1 and 2 of the '087 patent, and of claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent was not obvious to a person having ordinary skill in the art of rubber radiator hoses at or prior to the time the inventions of said claims were made by the patentee Caplan, in or about the period 1953-1954.

13. Claims 1 and 2 of the '087 patent and claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent are valid.

B. Infringement

14. Claims 1 and 2 of the '087 patent have been infringed by the defendant by its manufacture and sale of defendant's flexible mold-formed radiator hose.

15. Claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent have been infringed by the defendant's method or

process of manufacturing its flexible mold-formed radiator hose in accordance with the method or process disclosed in the plaintiff's illustrative chart (PX 33) and in the Stipulation of December 10, 1966, and letter attachment thereto (PX 6).

16. There is no filewrapper estoppel resulting from any of the proceedings in the Patent Office during the prosecution of the application for the '087 patent, as shown by the filewrapper thereof, or otherwise, which would estop claims 1 and 2 of the '087 patent from being entitled to an interpretation and construction which would include within their scope the knit-reinforced, flexible mold-formed radiator hose manufactured and sold by the defendant.

17. There is likewise no filewrapper estoppel resulting from any of the proceedings in the Patent Office during the prosecution of the application for the '087 patent, as shown by the filewrapper thereof, which would estop claims 1 and 2 of the '087 patent from being properly entitled to an interpretation and construction which would include within their scope the arrangement and positioning of the coils of the wire coil reinforcing spring, as embodied in defendant's knit-reinforced flexible mold-formed radiator hose.

18. Claims 1 and 2 of the '087 patent are not limited to a so-called all-rubber flexible mold-formed radiator hose but are properly entitled to a construction and interpretation which includes within their scope the defendant's knit-reinforced flexible mold-formed radiator hose.

19. There is no filewrapper estoppel resulting from any of the proceedings in the Patent Office during the prosecution of the application for the '705 patent, as shown by the filewrapper thereof, or resulting from any of the proceed-

ings in or during the Robert v. Caplan Interference No. 91640, which would estop any of claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent from being properly entitled to an interpretation and construction which would include within their scope the defendant's method or process of manufacturing its knit-reinforced flexible mold-formed radiator hose.

20. Claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent are not limited to a method or process of making a so-called all-rubber flexible mold-formed radiator hose, as exemplified by PX 18 and 22, but are properly entitled to an interpretation and construction which includes, in all respects, defendant's method or process of making its knit-reinforced flexible mold-formed radiator hose.

21. Claims 1 and 2 of the '087 patent are properly entitled to an interpretation which includes within their scope the so-called all-rubber flexible mold-formed radiator hose made first by Voit and subsequently by Thermoid and plaintiff, as well as plaintiff's present longitudinal cord-reinforced flexible mold-formed radiator hose.

22. Claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent are properly entitled to an interpretation which includes within their scope the plaintiff's method of making the so-called all-rubber flexible mold-formed radiator hose made by Voit and then by Thermoid and plaintiff, as well as the plaintiff's method of making its present longitudinal cord-reinforced flexible mold-formed radiator hose.

23. Defendant's flexible mold-formed radiator hose comes clearly within the language and scope of claims 1 and 2 of the '087 patent, and defendant's hoses are for the same purpose and accomplish the same result in the same way

and by the same construction as the hoses defined in and by claims 1 and 2 of the '087 patent and infringement of said claims is thus established. *Graver Tank & Mfg. Co.* v. *Linde Air Products Co.*, 339 U. S. 605 (1950); *Great Lakes Equip. Co.* v. *Fluid Systems, Inc.*, 217 F. 2d 613 (6th Cir. 1954).

24. Defendant's method or process for manufacturing its flexible mold-formed radiator hose comes clearly within the language and scope of claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent; and defendant's method or process is for the same purpose, accomplishes the same result in the same way and by the same steps as the method or process defined in and by claims, 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent, and infringement of said claims is thus established.

25. Plaintiff has complied with all of the statutory requirements as to marking and notice as to the '087 and '705 patents under 35 U. S. C. A., § 287.

26. Plaintiff is entitled to the relief prayed for in the complaint herein including:

1. An accounting for damages, under the provisions of 35 U. S. C. A., § 284, suffered by the plaintiff by reason of defendant's infringement of claims 1 and 2 of the '087 patent and claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent.

2. An injunction order permanently enjoining the defendant, its officers, agents, servants, employees, and attorneys, and all those persons in active concert with them who receive actual notice of the injunction order by personal service or otherwise from:

(a) manufacturing, selling or using, or offering for sale, or use, or causing to be manufactured, sold or used, or offered for sale, defendant's flexible, knit-reinforced, mold-formed radiator hose, as exemplified by PX 9 and by PX 25A and PX 25B, or any flexible radiator hose embodying the construction of claims 1 and 2 of the '087 patent;

(b) manufacturing, selling, or using or offering for sale or use, or causing to be manufactured, sold or used, any flexible radiator hose in infringement of claims 1 and 2 of the '087 patent;

(c) otherwise directly or contributorily infringing claims 1 and 2 of the '087 patent, or either of said claims;

(d) practicing or causing to be practiced the process or method of making knit-reinforced flexible mold-formed radiator hose in accordance with the process or method employed by the defendant in the manufacture of its knit-reinforced flexible radiator hose, as exemplified by PX 9 and PX 25A and PX 25B, by the process or method disclosed in the plaintiff's illustrative chart, PX 33, and in the stipulation of December 10, 1966, and letter attachment thereto, PX 6, or by any process or method covered by claims 1, 2, 3, 4, 5, 6, 13, 14, 15 and 16 of the '705 patent:

(e) manufacturing or causing to be manufactured any flexible radiator hose by a method or process covered by claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent or any of said claims; and

(f) otherwise directly or contributorily infringing claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of the '705 patent or any of said claims; and

3. A judgment in accordance herewith.

/s/ THOMAS D. LAMBROS,
United States District Judge.

APPENDIX B

RULES AND STATUTES

(1) Rule 205(b)—Patent Office Rules of Practice:

Where an applicant presents a claim copied or substantially copied from a patent, he must, at the time he presents the claim, identify the patent, give the number of the patented claim, and specifically apply the terms of the copied claim to his own disclosure, unless the claim is copied in response to a suggestion by the Office. The examiner will call to the Commissioner's attention any instance of the filing of an application or the presentation of an amendment copying or substantially copying claims from a patent without calling attention to that fact and identifying the patent.

(2) 28 U.S.C. § 2101 (c)

Any other appeal or any writ of certiorari intended to bring any judgment or decree in a civil action, suit or proceeding before the Supreme Court for review shall be taken or applied for within ninety days after the entry of such judgment or decree. A justice of the Supreme Court, for good cause shown, may extend the time for applying for a writ of certiorari for a period not exceeding sixty days.

(3) 35 U.S.C. § 103

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(4) 35 U.S.C. § 121

If two or more independent and distinct inventions are claimed in one application, the Commissioner may require the application to be restricted to one of the inventions. If the other invention is made the subject of a divisional application which complies with the requirements of section 120 of this title it shall be entitled to the benefit of the filing date of the original application. A patent issuing on an application with respect to which a requirement for restriction under this section has been made, or on an application filed as a result of such a requirement, shall not be used as a reference either in the Patent Office or in the courts against a divisional application or against the original application or any patent issued on either of them, if the divisional application is filed before the issuance of the patent on the other application. If a divisional application is directed solely to subject matter described and claimed in the original application as filed, the Commissioner may dispense with signing and execution by the inventor. The validity of a patent shall not be questioned for failure of the Commissioner to require the application to be restricted to one invention.

(5) 35 U.S.C. § 282

A patent shall be presumed valid. Each claim of a patent (whether in independent or dependent form) shall be presumed valid independently of the validity of other claims; dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting it.

* * *